ABSTRAK

Preparasi pada gigi anak dengan *handpiece* dapat menimbulkan aerosol. Aerosol yang terbentuk memunculkan kekhawatiran dan resiko penularan apalagi selama pandemi COVD-19. Dental unit konvensional memiliki *saliva ejector* (SE) untuk menyedot cairan, namun belum cukup efektif untuk mengeliminasi aerosol sehingga ada upaya untuk menggunakan high vacume evacuator (HVE) dan *extraoral suction* (EOS). Tujuan dari penelitian ini adalah membandingkan penggunaan jenis suction terhadap arah dan jarak sebaran aerosol selama preparasi gigi anterior atas.

Penelitian ini dilakukan di laboratorium pre klinik FKG UGM dengan menggunakan phantom. Terdapat 4 kelompok perlakuan suction:SE, SE+EOS, HVE, HVE+EOS. Preparasi untuk tiap perlakuan dilakukan selama 10 menit. Pengukuran jarak dan arah sebaran aerosol dilakukan dengan meletakkan filter paper setiap 30 cm pada tali sepanjang 300 cm dengan arah jarum jam 12, 2, 4, 6, 8, 10. Penilaian pada penelitian ini dengan melihat pada filter papper yang terkontaminasi cairan berwarna biru. Data dianalisis menggunakan analisis chi squre dan kuskal wallis

Hasil kelompok saliva ejector paling banyak arah sebaran aerosol dengan jarak paling jauh 120 cm pada arah jarum jam angka 2, 4, 10, dan 12 (mean±sd 36,04±36,28). Kelompok HVE + EOS paling dapat menekan sebaran aerosol dengan jarak terpendek 30 cm pada arah 2 dan 10. Hasil uji chi-square didapatkan nilai $p<0,05$ dan hasil menggunakan uji non parametrik kruskal wallis yang dilanjutkan dengan uji post hoc lsd dengan nilai $p<0,05$.

Kesimpulan, penggunaan SE mempunyai arah sebaran paling luas dan jarak sebaran paling panjang diikuti oleh HVE, SE + EOS dan HVE + EOS.

Kata kunci: *Dental aerosol, Dental suction, Saliva ejector, High-volume evacuator, Extraoral aerosol suction*

ABSTRACT

Preparation of children's teeth by using a handpiece causes aerosol. The Aerosol that is formed raises concerns and the risk of transmission during the pandemic COVD-19. Dental conventional units have a saliva ejector (SE) for the evacuation of fluid, but it is not effective enough to eliminate aerosol therefore there are attempts to use high vacuum evacuator (HVE) and extraoral suction (EOS). The aim of this study is to compare the use of this type of suction against the direction and distance of aerosol distribution during upper anterior tooth preparation.

This research was conducted in pre clinic laboratory FKG UGM by using phantom. There were four suction treatment groups: SE, SE + EOS, HVE, HVE + EOS. Preparation for each treatment was carried out for 10 minutes. The measurement of direction was done by placing filter paper that has been measured every 30 cm along 300 cm in the direction with 12, 2, 4, 6, 8, 10 clockwise. The assessment of this study was by identifying paper filters that were contaminated with blue liquid. The data was analysed by using Chi Square and Kruskal Wallis.

The result of the saliva ejector group was the most direction of aerosol distribution with the longest distance was 120 cm in the clockwise direction 2, 4, 10, and 12 (mean±sd=36,04±36,28The HVE + EOS group is the most effective in reducing aerosol distribution with the shortest distance of 30 cm in the 2nd and 10th directions. The chi-square test result obtained a value of $p<0.05$ and the result using a non-parametric test of Kruskal Wallis which was followed by a post hoc test of lsd with a value of $p<0.05$.

In conclusion, the use of SE has the widest spread direction and the longest spread distance followed by HVE, SE + EOS and HVE + EOS.

Keywords: Dental aerosol, Dental suction, Saliva ejector, High-volume evacuator, Extraoral aerosol suction